Application/Control Number: 10/811,617 Page 2

Art Unit: 2800

Clmpto 01092006 PY

1. (Original) A method of forming a semiconductor device comprising:

implanting ions through a first surface of a monocrystalline semiconductor material to a selected depth forming an amorphous layer adjacent the first surface;

heating the semiconductor material to convent the amorphous layer to a first layer of semiconductor material; and

bonding a handle wafer to the first surface of the semiconductor material.

4. (Original) The method of claim 1, wherein implanting ions through a first surface of the monocratulline semiconductor material to a selected depth further comprises:

implanting ions of the semiconductor material.

5. (Original) The method of claim 1, wherein implanting ions through a first surface of the monocratalline semiconductor material to a selected depth further comprises:

implanting silicon ions.

6. (Original) The method of claim1, further comprising:

forming devices in a second layer of semiconductor material to form an integrated circuit, wherein the second layer of semiconductor material has not been exposed to ion implantation.

7. (Original) The method of claim 1, further comprising: forming at least one device in a second layer of semiconductor material, wherein the second layer of semiconductor material has not been exposed to ion implantation.

- 8. (Original) The method of claim 7, wherein the at least one device is a device from a group of devices consisting of a bipolar junction transistor, a field effect transistor, a capacitor, a resistor and a thyristor.
- (Original) The a method of forming an integrated circuit in a wafer of semiconductor material, the method comprising:

implanting ions through a first surface of the wafer to form a first amorphous layer edjacent the first surface of the wafer;

controlling the wafer to convert the first amporphous layer to a first monocrystalline semiconductor layer;

bonding a handle water to the first surface of the water, and

forming semiconductor devices in a second layer of the wafer adjacent a second surface of the wafer, wherein the second layer has not been exposed to the ion implantation.

10. (Original) The method of claim 9, wherein annealing the wafer to convert the first surface of the wafer comprises:

heating the wafer from 450° C to 1200° for about 15 minutes to 8 hours.

11. (Original) The method of claim 9, wherein implanting the ions to form the first amorphous layer further comprises:

implanting ions of the semiconductor material of the waler to form the first amorphous layer.

12. (Original) The method of claim 9, wherein bonding the handle waster to the first surface of the water, further comprises:

forming an insulating bond layer on a surface of the handle wafer, and bonding the insulating bond layer to the first surface of the wafer.

- (Original) The method of claim 9, further comprising: thinning the second layer of the wafer to a desired thickness.
- 14. (Original) The method of claim 13, wherein the method of thinning the second layer of the wafer to the desired thickness is a method from a group of methods consisting of eaching, lapping, grinding and polishing.
- 15. (Original) The method of claim 9, wherein implanting the ions to form the first amorphous layer further comprises:

forming a oxide layer overlaying the first surface of the water; and implanting the ions through the oxide layer.

- (Original) The method of claim 15, further comprising: removing the oxide layer after the implemention of ions.
- 17. (Original) The method of claim 9, further comprising: forming a genericg zone between the first monotrystalline semiconductor layer and the second layer of the wafer.

18. (Currently amended) The method of claim 17, wherein forming the gettering zone further comprises:

heating the wafer from 88-800° C to 1200° for about 1 to 6 hours.

19. (Original) A method of forming an integrated circuit in a monocrystalline semiconductor wafer, the method comprising:

implanting ions through a first surface of the water to form a first layer of unorphous material adjacent the first surface of the water which extends a select depth from the first surface; annealing the first layer of amorphous layer to form a first monocrystalline semiconductor layer;

forming a gettering zone containing active gettering sites between the first layer monocrystalline semiconductor material and a second layer of monocrystalline material, wherein the second layer of monocrytalline material has not been exposed to ion implementation;

bonding a handle wafer to the first surface of the wafer, and

forming devices in the second layer of monerystalline material to form the integrated clearly.

20. (Original) The method of claim 19, wherein implanting the ions to form the first layer of amorphous material a select depth further comprises:

controlling the energy used to implant the ions.